

CLAIMS

1. Method for transferring an electrically active thin film from an initial substrate to a target substrate, comprising the following steps:

- ion implantation through one face of said initial substrate in order to create a buried, embrittled film at a determined depth in relation to the implanted face of the initial substrate, a thin film thus being delimited between the implanted face and the buried face,

- fastening the implanted face of the initial substrate with a face of the target substrate,

- separating the thin film from the remainder of the initial substrate at the level of the buried film,

- thinning down the thin film transferred on the target substrate,

characterised in that the implantation dosage, energy and current are chosen, during the ion implantation stage, so that the concentration of implantation defects is less than a determined threshold, resulting in, within the thinned down thin film, a number of acceptor defects that is compatible with the desired electrical properties of the thin film.

2. Method according to claim 1, characterised in that the ion implantation step consists in implanting ions chosen from among the following species: hydrogen and rare gases.

3. Method according to claim 1, characterised in that the step of fastening involves a bonding chosen from bonding by molecular adhesion via intermediate films or without intermediate films, bonding by reaction, metallic bonding, brazing or bonding by species diffusion.

4. Method according to claim 1, characterised in that a healing annealing of the implantation defects is carried out on the thin film.

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5. Method according to claim 4, characterised in that the healing annealing is carried out before the step of thinning down the thin film.

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6. Method according to claim 4, characterised in that the healing annealing is carried out after the step of thinning down the thin film.

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7. Application of the method according to any of the previous claims in order to obtain a thin film of SiC, GaAs, GaN, diamond or InP on a target substrate.